

09/406,368

99RE067/ALBRP138US

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

Claims 1-7 (Cancelled)

8. (Allowed) A multiple axis vibration detection system, comprising:
a light source that directs a beam of light;
a light receiving system that receives at least a portion of the beam of light;
a first light modulating system that modulates the light beam received by the light receiving system so as to correspond with vibration of a machine;
a second light modulating system that modulates the light beam received by the light receiving system so as to correspond with vibration of the machine, the second light modulating system being in series to the first light modulating system; and
a processing system that analyzes data received from the light receiving system to determine vibration of the machine in a plurality of axes.

9. (Allowed) The system of claim 8, at least one of the first light modulating system and the second light modulating system include an obstruction modulator that obstructs the beam of light so that only a portion of the beam of light is received by the light receiving system.

10. (Allowed) The system of claim 9, the obstruction modulator obstructs the light beam when the machine is vibrating.

11. (Allowed) The system of claim 9, the obstruction modulator obstructs the light beam when the machine is not vibrating.

Claims 12-17 (Withdrawn)

09/406,368

99RE067/ALBRP138US

Claim 18 (Cancelled)

Claims 19-20 (Withdrawn)

Claims 21-32 (Cancelled)

33. (Currently Amended) A system that determines a vibration state for a machine, comprising:

a light receiver that receives light from a source;

~~an obscuring body~~ a light modulating system comprising an annular structure that based on a particular vibration state of a machine obscures a portion of light transmitted from the source to the light receiver, and

a processor that analyzes an amount of light received by the light receiver to determine the particular vibration state.

34. (Previously Presented) The system of claim 33, the amount of light received by the light receiver increases with increased vibration state of the machine.

35. (Previously Presented) The system of claim 33, the amount of light received by the light receiver decreases with increased vibration state of the machine.

36. Canceled.

37. (Previously Presented) The system of claim 36, the light modulating system includes a housing with a first opening that receives a light beam, a second opening that allows passage of a light beam to the light receiver as a function of a vibration state of the machine.

38. (Previously Presented) The system of claim 36, the light modulating system is attached to the machine.

39. Canceled.

09/406,368

99RE067/ALBRP138US

40. (Previously Presented) The system of claim 39, the annular structure permits light to pass in one direction.

41. (Previously Presented) The system of claim 33, the processor determines a vibration state of the machine based upon an area illuminated on a surface of the light receiver.

Claims 42-51 (Cancelled).

52. (Previously Presented) A system that determines a vibration state for a machine, comprising:

- a light receiver that receives light from a source;
- a light modulating system, having an annular structure, that obscures a portion of light transmitted from the source to the light receiver based on a particular vibration state of the machine, and
- a processor that analyzes an amount of light received by the light receiver to determine the particular vibration state of the machine.

53. (Previously Presented) The system of claim 52, the annular structure allows light to pass in one direction.

54. (Previously Presented) The system of claim 52, the light modulating system includes a housing with a first opening that receives a light beam and a second opening that permits the light beam to pass to the light receiver as a function of the vibration state of the machine.

55. (Previously Presented) The system of claim 52, the light modulating system is attached to the machine.

56. (Previously Presented) The system of claim 52, the processor determines the vibration state of the machine based upon an area illuminated on the surface of the light receiver.

09/406,36899RE067/ALBRP138US

57. (Previously Presented) The system of claim 52, the amount of light received by the light receiver increased with increased vibration state of the machine.

58. (Previously Presented) The system of claim 52, the amount of light received by the light receiver decreases with increased vibration state of the machine.